THE POTENTIAL FOR DETERMINING THE PREDICTIVE VALIDITY OF ASSESSED NEEDS

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Canadian Association on Gerontology Meetings
November 3, 1979, Halifax

As indicated in the introduction one of the specific objectives of this longitudinal research is to "test the validity of the 'needs assessment profile methods' developed from the Aging in Manitoba survey as indicators of home care and personal care home service utilization and as predictors of subsequent utilization of medical services". The merging of the two different data bases allows for the identification of the characteristics of differential health care utilizers and the determination of non-diagnostic influences on the utilization of health care services as well as on morbidity patterns and mortality. Likewise the availability of hard data on utilization provides the first opportunity for a needs assessment instrument to be tested for predictive validity other than by patient recall or idiosyncratic clinical confirmation.

While needs assessment has become a virtual "password" for funders of programs relative to elderly persons, there are still very few such assessment instruments which have any of the requisite characteristics of standardized instruments. There are only six assessment instruments, including "Aging Needs" reported here, which satisfy sufficient requirements to be considered seriously for research purposes. To date only two methods of determining predicitive validity have been available to researchers, both of which are less than would be desirable. The researcher has had to either rely on respondent recall of service utilization and health events with all of the problems attendent on recall or seek idiosyncratic confirmation from clinicians. The variability and subjectivity of both these techniques have left most researchers very uneasy and the findings of such validity studies highly suspect. That is, the necessarily low level of reliability with these two techniques has seriously threatened their utility in providing measures of predicitive validity.

While the Aging Needs Assessment Instrument, developed for the 1971 Manitoba Study, was limited initially in the ability to determine predictive validity to respondent recall, this is no longer the case. Given, the current study with all the health service utilization data for the respondents of the 1971 study taken from their individual claims and service administrative data, it is finally possible to objectively determine the predicitive validity of the Aging Needs Assessment Instrument for a very large sample of elderly persons.

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The Aging Needs Assessment Instrument measures the degree of perceived unmet need in nine specific need areas as follow: Scale 1, Psycho-social Needs; Scale 2, Shelter Needs; Scale 3, Household Maintenance, Food, and Clothing Needs; Scale 4, Ethno-cultural Needs; Scale 5, Physical Health Functioning Needs; Scale 6, Mental Health Functioning Needs; Scale 7, Economic Needs; Scale 8, Accessibility of Family/Friends and Familiar Community Needs; and Scale 9, Availability of Family/Friends and Community Resource Needs. Each need is measured on a scale of one to five with one, being low unmet need or independent in the specific need area and five being high unmet need or dependent in the specific need. These need scores are profiled over the nine needs to identify the strengths and limitations of the respondents or the configuration of needs. For purposes of this project a summary needs score has been added which is the sum of the individual mean need scores and has been labelled the Grand Total Mean Need.

As can be expected given the scope of the utilization data, there are many measures of health service utilization. These include, among others: the number of ambulatory visits; the number of ambulatory services; selected specific services frequencies; the number and frequency of diagnoses; the number of acute hospital admissions; the number of days of acute hospitalization; the average length of acute hospital stay; the latter three also for chronic admissions; the NAMCES code for seriousness of diagnosis; the risk to recovery index; the hernia equivalent index; the number of chronic conditions; and the percent of visits and services for chronic conditions. Still to be added to these data are other utilization indicators including: days of any service use; months of service use; entry to personal care home; level of care (and changes) in personal care home; months in personal care home; admission to home care; months of home care use; and death. Each of these variables has been (or will be) summarized for each quarter and for each of the eight years, and will ultimately be able to be summarized for the total of the eight years and 32 quarters. However for the present discussion the utilization measures selected include: the number of ambulatory visits; the number of months with a visit; the number of ambulatory services; percent of visits for chronic care; percent of services for chronic care; the average length of acute hospital stay; and the number of chronic care admissions each for the year before the interview and for the year following the interview.

The nine needs scale scores and the grand total mean need score have been used to divide the 4558 respondents according to their level of self-

perceived needs as low, medium and high. One third of the respondents were assigned to each of the levels for each of the need areas as well as the grand total need. The same principle was applied to dividing the utilization indicators into low, medium, and high utilizers; however, because some utilization was minimal, it was not always possible to divide service use evenly into thirds. On the accompanying tables the need levels are shown down the left side and always represent one-third of the respondents while the utilization levels for the year before and the year after the interview are shown across the top and the distribution of respondents is identified in each table.

Rather than discussing each of these seven tables, here, I would simply draw their variability to your attention and invite your comments. However, despite this variability, there is ample evidence of the relationship between the levels of unmet needs and the levels of selected health service utilization. More analyses, especially including the remaining years of data are necessary in order to conclusively answer the question of predicitive validity of the Aging Needs Assessment Instrument. However, it is worth noting that even in these preliminary findings there is support to the claim of predictive validity and this from actual objective health service use rather than the subjective respondent recall measures or the idiosyncratic clinical confirmation measures.

TABLE 1 PERCENT OF RESPONDENTS BY LEVEL OF NEEDS SCORES BY LEVEL OF UTILIZATION OF AMBULATORY VISITS IN YEARS ONE AND TWO

	Utilization Levels / Need Levels		Ambulatory Visits					
			Year 1			Year 2		
			Low 33%	Medium 33%	High 33%	Low 33%	Medium 33%	High 33%
A.	Scale 1	Low	33.5	35.9	33.7	33.8	36.7	32.7
		Medium	31.1	35.4	33.7	32.0	35.0	33.2
		High	35.4	28.7	32.5	34.2	28.3	34.2
B.	Scale 2	Low	23.1	33.0	35.8	25.8	29.6	36.1
		Medium	32.1	33.4	33.6	32.3	34.3	32.5
		High	44.8	33.6	30.6	41.9	36.1	31.3
C.	Scale 3	Low	37.3	44.4	39.9	28.6	35.4	36.0
		Medium	23.9	25.1	25.7	28.9	34.1	37.1
		High	38.9	30.5	34.4	33.0	31.0	36.0
D.	Scale 4	Low	26.3	31.1	30.2	28.1	30.5	29.1
		Medium	36.5	36.2	35.0	34.7	37.3	35.5
		High	37.1	32.6	34.8	37.1	32.2	35.4
E.	Scale 5	Low	40.7	34.3	24.1	41.7	34.4	23.7
		Medium	27.8	32.8	31.9	27.9	32.4	31.9
		High	31.5	32.8	44.0	30.4	33.2	44.3
F.	Scale 6	Low	38.0	39.9	32.4	39.8	39.4	31.1
		Medium	28.0	31.2	35.0	26.3	32.5	35.0
		High	33.9	28.9	32.6	33.9	28.1	33.6
G.	Scale 7	Low	31.9	31.6	30.5	32.3	31.9	30.0
		Medium	30.9	37.2	36.2	32.0	35.5	36.5
		High	37.1	31.2	33.3	35.6	32.6	33.5
H.	Scale 8	Low	34.1	34.8	30.9	34.3	34.5	31.1
		Medium	35.4	33.6	35.5	34.9	35.4	34.2
		High	30.5	31.6	33.6	30.8	30.1	34.7
I.	Scale 9	Low	33.6	35.1	33.8	34.3	35.1	33.2
		Medium	32.3	35.7	33.7	32.6	35.0	33.9
		High	34.1	29.2	32.5	33.1	29.9	32.9
J.	Grand Total Need	Low	32.1	36.8	31.4	33.6	35.6	31.1
		Medium	32.1	33.6	33.4	32.0	34.1	33.0
		High	35.9	29.5	35.2	34.5	30.3	35.9

TABLE 2 PERCENT OF RESPONDENTS BY LEVEL OF NEEDS SCORES BY LEVEL OF UTILIZATION FROM NUMBER OF MONTHS OF VISITS IN YEARS ONE AND TWO

	Utilization Levels / Need Levels		Number of Months of Visits					
			Year 1			Year 2		
			Low 33%	Medium 33%	High 33%	Low 33%	Medium 33%	High 33%
A.	Scale 1	Low	34.1	36.1	33.6	33.2	37.0	32.8
		Medium	31.0	35.6	34.3	32.9	33.7	33.8
		High	34.9	28.3	32.1	34.0	29.4	33.4
B.	Scale 2	Low	23.4	32.8	36.0	25.3	30.7	36.7
		Medium	31.9	34.5	33.2	33.2	33.0	33.0
		High	44.7	32.7	30.8	41.5	36.3	30.4
C.	Scale 3	Low	37.8	45.0	40.2	38.4	42.5	40.6
		Medium	23.9	24.9	25.8	23.6	25.2	26.0
		High	38.3	30.2	34.0	38.0	32.3	33.4
D.	Scale 4	Low	26.4	32.6	29.8	28.0	30.1	29.7
		Medium	36.2	35.2	36.0	34.9	37.0	35.7
		High	37.4	32.3	34.2	37.1	32.9	34.6
E.	Scale 5	Low	40.5	36.3	24.1	41.3	33.2	23.4
		Medium	27.9	32.7	32.4	28.0	32.4	32.3
		High	31.6	31.1	43.5	30.7	34.4	44.3
F.	Scale 6	Low	38.4	41.4	32.4	39.9	38.2	31.6
		Medium	28.4	30.0	35.2	26.1	32.9	35.7
		High	33.2	28.6	32.5	34.0	28.8	32.7
G.	Scale 7	Low	32.1	31.4	30.7	32.3	31.5	30.2
		Medium	31.1	37.7	36.3	32.1	35.2	37.2
		High	36.8	30.9	33.0	35.6	33.3	32.6
H.	Scale 8	Low	34.0	35.2	31.3	34.3	34.2	31.0
		Medium	35.0	34.3	35.0	34.6	35.3	34.7
		High	30.9	30.4	33.7	31.1	30.5	34.3
I.	Scale 9	Low	33.4	36.3	33.6	34.2	35.4	32.8
		Medium	33.0	35.0	34.0	32.9	34.4	34.4
		High	33.6	28.8	32.4	32.9	30.3	32.8
J.	Grand Total Need	Low	32.4	37.4	31.9	33.6	35.4	31.0
		Medium	32.1	34.3	33.2	31.8	33.3	34.1
		High	35.6	28.3	35.0	34.7	31.3	34.9

TABLE 3 PERCENT OF RESPONDENTS BY LEVEL OF NEEDS SCORES BY LEVEL OF UTILIZATION OF AMBULATORY SERVICES IN YEARS ONE AND TWO

	Utilization Levels / Need Levels		Ambulatory Services					
			Year 1			Year 2		
			Low 50%	Medium 25%	High 25%	Low 50%	Medium 25%	High 25%
A.	Scale 1	Low	33.2	36.6	35.0	33.9	35.9	34.1
		Medium	30.6	37.2	36.6	32.2	35.1	34.7
		High	36.2	26.2	28.4	33.8	29.0	31.2
B.	Scale 2	Low	28.2	35.5	32.8	29.5	31.9	32.7
		Medium	32.7	33.6	33.5	33.8	33.4	31.3
		High	39.2	30.9	33.7	36.7	34.6	35.9
C.	Scale 3	Low	34.7	45.2	49.4	46.7	41.7	47.5
		Medium	25.2	25.0	24.2	24.8	25.4	24.7
		High	40.1	29.8	26.3	38.5	32.8	27.8
D.	Scale 4	Low	27.7	31.0	31.3	27.6	32.1	30.6
		Medium	33.9	39.0	37.8	34.9	36.4	37.4
		High	38.4	30.0	30.9	37.5	31.5	32.0
E.	Scale 5	Low	34.2	31.2	30.8	35.1	29.2	30.4
		Medium	28.7	34.6	32.7	29.9	32.5	31.8
		High	37.1	34.2	36.5	35.0	38.2	37.8
F.	Scale 6	Low	33.8	39.1	40.8	35.9	35.9	38.7
		Medium	29.1	32.4	36.3	28.0	35.4	35.9
		High	37.1	28.5	22.8	36.0	28.7	25.4
G.	Scale 7	Low	30.6	31.0	33.2	31.5	32.4	30.2
		Medium	32.2	38.3	37.8	33.4	36.2	36.7
		High	37.2	30.7	29.0	35.1	31.4	33.1
H.	Scale 8	Low	32.3	35.6	33.1	33.5	33.2	32.6
		Medium	33.9	36.2	35.9	33.9	36.3	35.8
		High	33.8	28.2	31.0	32.6	30.5	31.7
I.	Scale 9	Low	32.0	35.2	38.1	32.3	36.0	36.6
		Medium	32.1	34.7	37.1	32.6	33.6	36.8
		High	35.9	30.1	24.8	35.1	30.4	26.6
J.	Grand Total Need	Low	30.1	37.1	37.6	32.3	33.7	35.3
		Medium	31.9	34.7	34.3	31.8	34.6	34.5
		High	38.0	28.2	28.1	35.9	31.6	30.2

TABLE 4 PERCENT OF RESPONDENTS BY LEVEL OF NEEDS SCORES BY LEVEL OF UTILIZATION FROM PERCENT OF VISITS FOR CHRONIC CARE IN YEARS ONE AND TWO

	Utilization Levels / Need Levels		Visits for Chronic Care					
			Year 1			Year 2		
			Low 25%	Medium 35%	High 40%	Low 25%	Medium 35%	High 40%
A.	Scale 1	Low	32.7	35.5	34.4	34.2	35.7	33.0
		Medium	31.4	35.5	32.9	31.2	34.2	34.2
		High	35.9	29.1	32.7	34.6	30.1	32.9
B.	Scale 2	Low	21.4	35.3	32.7	24.7	34.7	31.0
		Medium	31.0	33.7	33.8	31.8	32.8	34.3
		High	47.6	30.9	33.5	43.6	32.6	34.7
C.	Scale 3	Low	36.3	40.0	43.7	36.8	40.6	43.0
		Medium	23.5	26.7	24.3	24.3	26.1	24.1
		High	40.3	33.4	32.0	38.3	33.3	32.9
D.	Scale 4	Low	27.6	31.4	28.5	27.7	30.8	28.7
		Medium	35.0	36.1	36.2	35.3	36.6	35.5
		High	37.4	32.6	35.3	37.0	32.6	35.8
E.	Scale 5	Low	41.1	29.3	30.5	42.4	28.3	30.8
		Medium	28.9	30.8	32.2	26.7	32.4	32.3
		High	30.0	39.9	37.3	31.0	39.4	36.9
F.	Scale 6	Low	36.9	35.6	37.5	39.5	35.5	35.8
		Medium	28.7	33.1	32.0	25.5	34.1	33.1
		High	34.4	31.4	30.5	35.0	30.4	31.1
G.	Scale 7	Low	31.2	30.0	32.6	31.4	31.6	30.9
		Medium	30.3	37.9	34.9	32.7	36.4	34.6
		High	38.4	32.1	32.5	35.9	32.0	34.5
H.	Scale 8	Low	34.4	32.9	32.7	34.9	33.1	32.0
		Medium	36.7	36.0	32.6	34.2	35.6	34.5
		High	28.9	31.1	34.8	30.9	31.2	33.5
I.	Scale 9	Low	33.4	32.5	36.2	33.6	34.5	34.2
		Medium	32.2	36.5	32.6	31.4	33.8	35.8
		High	34.4	31.0	31.2	34.9	31.7	30.1
J.	Grand Total Need	Low	31.0	33.4	34.9	33.0	33.7	33.2
		Medium	32.4	34.0	32.6	31.2	33.8	33.6
		High	36.5	32.7	32.5	35.7	32.6	33.2

TABLE 5 PERCENT OF RESPONDENTS BY LEVEL OF NEEDS SCORES BY LEVEL OF UTILIZATION FROM PERCENT OF AMBULATORY SERVICES FOR CHRONIC CARE IN YEAR ONE & TWO

	Utilization Levels / Need Levels		Percent of Ambulatory Services for Chronic Care					
			Year 1			Year 2		
			Low 60%	Medium 20%	High 20%	Low 33%	Medium 33%	High 33%
A.	Scale 1	Low	33.5	35.4	36.1	34.2	32.7	36.4
		Medium	31.7	37.9	35.1	32.4	36.3	34.1
		High	34.7	26.7	28.8	33.3	31.0	29.6
B.	Scale 2	Low	28.7	33.4	35.4	29.9	31.2	33.5
		Medium	33.1	31.6	34.2	33.8	32.1	31.7
		High	38.3	35.0	30.3	36.3	36.7	34.9
C.	Scale 3	Low	36.3	48.6	46.8	37.0	46.7	46.3
		Medium	24.7	25.8	24.7	25.4	24.7	23.7
		High	38.9	25.6	28.4	37.7	28.6	29.9
D.	Scale 4	Low	28.3	32.2	29.9	28.4	31.0	30.5
		Medium	34.5	37.5	38.9	35.1	36.3	38.0
		High	37.2	30.3	31.2	36.5	32.7	31.5
E.	Scale 5	Low	34.4	30.9	29.1	35.0	30.5	27.3
		Medium	29.2	34.2	33.4	29.8	31.7	33.6
		High	36.4	34.9	37.5	35.2	37.8	39.1
F.	Scale 6	Low	34.9	42.2	37.4	36.7	38.0	35.2
		Medium	29.6	34.6	35.2	28.6	36.3	37.0
		High	35.5	23.2	27.4	34.8	35.7	27.8
G.	Scale 7	Low	30.6	30.8	34.1	32.1	27.1	32.7
		Medium	33.3	38.8	36.2	33.9	36.4	36.2
		High	36.1	30.4	29.6	34.0	36.4	31.1
H.	Scale 8	Low	32.8	33.9	33.8	33.2	32.7	33.6
		Medium	34.3	35.1	36.3	33.7	37.3	36.5
		High	32.9	30.9	29.9	33.1	30.0	29.9
I.	Scale 9	Low	32.5	37.2	37.0	32.9	35.4	37.0
		Medium	33.3	39.3	31.4	33.3	37.1	33.0
		High	34.3	23.5	31.6	33.8	27.5	29.9
J.	Grand Total Need	Low	31.3	37.1	36.8	32.7	34.4	34.5
		Medium	32.0	35.3	34.6	32.1	33.6	35.7
		High	36.7	27.6	28.6	35.2	21.9	29.8

TABLE 6 PERCENT OF RESPONDENTS BY LEVEL OF NEEDS SCORES BY LEVEL OF UTILIZATION OF AVERAGE LENGTH OF ACUTE HOSPITAL STAY IN YEARS ONE AND TWO

	Need Levels \ Utilization Levels		Average Length of Stay					
			Year 1			Year 2		
			Low 80%	Medium 10%	High 10%	Low 80%	Medium 10%	High 10%
A.	Scale 1	Low	34.3	37.4	31.7	35.0	32.3	32.1
		Medium	33.3	34.0	34.3	33.9	33.6	29.5
		High	32.4	28.6	34.0	31.1	34.1	38.4
B.	Scale 2	Low	30.3	34.3	32.2	30.4	32.1	32.8
		Medium	32.5	35.2	35.4	32.7	35.7	32.1
		High	37.2	30.5	32.4	36.9	32.1	35.1
C.	Scale 3	Low	41.4	34.5	38.2	41.4	35.4	40.7
		Medium	24.4	30.5	24.2	24.8	26.7	23.7
		High	34.2	35.0	37.5	33.9	37.9	35.6
D.	Scale 4	Low	29.8	26.9	26.6	30.0	26.7	27.0
		Medium	36.6	35.7	29.4	36.4	36.6	30.7
		High	33.5	37.4	44.1	33.6	36.7	42.3
E.	Scale 5	Low	34.3	26.7	25.4	34.4	26.2	28.1
		Medium	31.0	31.9	28.7	31.6	28.7	27.9
		High	34.7	41.4	45.9	33.9	45.1	44.0
F.	Scale 6	Low	38.6	32.9	23.8	39.5	27.7	26.0
		Medium	31.1	32.9	33.8	31.1	34.1	31.9
		High	30.3	34.3	42.4	29.4	38.2	42.1
G.	Scale 7	Low	31.7	31.7	27.5	32.0	30.5	26.7
		Medium	35.0	33.8	34.5	34.8	33.9	36.3
		High	33.3	34.5	38.0	33.2	35.6	37.0
H.	Scale 8	Low	34.0	31.9	27.7	34.1	32.3	27.4
		Medium	34.1	40.0	36.1	34.2	37.4	36.3
		High	31.9	28.1	36.1	31.7	30.3	36.3
I.	Scale 9	Low	35.5	32.4	24.7	35.6	31.5	26.5
		Medium	33.9	32.1	35.7	34.0	33.9	32.8
		High	30.7	35.5	39.6	30.4	34.6	40.7
J.	Grand Total Need	Low	34.8	31.0	23.3	35.6	26.1	25.8
		Medium	33.0	34.0	32.9	33.0	36.2	29.1
		High	32.2	35.0	43.8	31.5	37.7	45.2

TABLE 7 PERCENT OF RESPONDENTS BY LEVEL OF NEEDS SCORES BY LEVEL OF UTILIZATION OF CHRONIC CARE ADMISSIONS IN YEARS ONE AND TWO

Need Levels \ Utilization Levels		Chronic Care Admission			
		Year 1		Year 2	
		Low 98%	High 2%	Low 98%	High 2%
Scale 1	Low	34.7	12.1	34.6	22.4
	Medium	33.6	24.2	33.4	34.4
	High	31.7	63.6	32.0	43.4
Scale 2	Low	30.9	28.8	30.7	36.8
	Medium	32.9	47.0	33.0	34.2
	High	36.3	24.2	36.2	28.9
Scale 3	Low	40.8	21.2	40.8	21.1
	Medium	25.1	15.2	24.9	26.3
	High	34.1	63.6	34.3	52.6
Scale 4	Low	29.5	16.7	29.4	21.1
	Medium	36.1	19.7	35.9	32.9
	High	34.4	63.6	34.7	46.1
Scale 5	Low	33.1	10.6	33.0	18.4
	Medium	31.0	24.2	31.0	23.7
	High	36.0	65.2	36.0	57.9
Scale 6	Low	37.1	7.6	36.9	19.7
	Medium	31.7	22.7	31.6	26.3
	High	31.3	69.7	31.4	53.9
Scale 7	Low	31.5	18.2	31.5	23.7
	Medium	34.8	36.4	34.7	39.5
	High	33.7	45.5	33.8	36.8
Scale 8	Low	33.6	7.6	33.6	11.8
	Medium	35.0	27.3	34.6	46.1
	High	31.5	65.2	31.8	42.1
Scale 9	Low	34.4	18.2	34.4	21.1
	Medium	34.0	25.8	34.0	27.6
	High	31.6	56.1	31.6	51.3
Grand Total Need	Low	33.7	7.6	33.7	13.2
	Medium	33.2	21.2	33.1	32.9
	High	33.0	71.2	33.2	53.9